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PROCEEDINGS
OF
THE ROYAL SOCIETY.

1842.

No. 56.

December 8, 1842.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

The following papers were read, viz. :—

1. "Observations on the Blood-corpuscles, particularly with reference to opinions expressed and conclusions drawn in papers 'On the Corpuscles of the Blood,' and 'On Fibre,' recently published in the Philosophical Transactions." By T. Wharton Jones, Esq., F.R.S.

The author points out what he considers to be important errors in the series of papers by Dr. Martin Barry, which have lately appeared in the Philosophical Transactions, and are entitled, "*On the Corpuscles of the Blood*," and "*On Fibre*." He alleges that Dr. Barry has generally confounded the colourless corpuscles contained in the blood with the red corpuscles of the same fluid; each of which latter kind consists of a vesicle or cell, with thick walls, but in a collapsed and flattened state, and having therefore a biconcave form, and in consequence of its thick wall being doubled on itself, presenting under the microscope a broad circumferential ring, which is illuminated or shaded differently from the depressed central portion, according to the focal adjustment of the instrument: while the colourless corpuscles, on the other hand, are of a globular shape, strongly refractive of light, and granulated on their surface, and are of less specific gravity and of somewhat larger size than the red corpuscles. The author quotes various passages from Dr. Barry's papers in proof of his assertions, and refers particularly to fig. 23 of his second paper on the corpuscles of the blood. He farther states, that Dr. Barry's description of the appearances of what he terms the red corpuscles, in paragraphs 53, 68, and 76 of his second paper, can, in fact, apply only to the colourless corpuscles: and he observes, that even when Dr. Barry does, at last, in his "Additional Observations," advert to the distinction between the red and the colourless globules, he considers the latter as being merely "the discs" contained in the red globules appearing under an altered state.

The author regards as wholly erroneous the notion which Dr. Barry entertains that a fibre exists in the interior of the blood-cor-

puscle; and that these fibres, after their escape from thence, constitute the fibres which are formed by the consolidation of the fibrin of the *liquor sanguinis*. The beaded aspect presented by the double contour of the thick wall of the red corpuscle when it has been acted upon either by mechanical causes or by chemical reagents, of which the effect is to corrugate the edge, and to bend it alternately in opposite directions, has, in the opinion of the author, given rise to the illusive appearance of an internal, annular fibre. The appearance of flask-like vesicles presented by some of the red corpuscles, with the alleged fibre protruding from their neck, the author ascribes altogether to the effects of decomposition, which has altered the mechanical properties of the corpuscle, and allowed it to be drawn out, like any other viscid matter, into a thread.

In conclusion, he remarks, that if these statements of Dr. Barry should be recognised as fundamental errors in his premises, the whole of the reasonings built upon them must fall to the ground.

2. "Wind Table, from observations taken at the summit of the Rock of Gibraltar." By Colonel George J. Harding. Communicated by Captain Beaufort, R.N., F.R.S., by order of the Lords Commissioners of the Admiralty.

3. "Spermatozoa observed within the Mammiferous Ovum." By Martin Barry, M.D., F.R.S. L. and Ed.

In examining some ova of a rabbit, of twenty-four hours, the author observed a number of spermatozoa in their interior.

December 15, 1842.

FRANCIS BAILY, Esq., V.P., in the Chair.

His Grace the Duke of Norfolk was balloted for and duly elected a Fellow of the Society.

A paper was read, entitled "Experimental Inquiry into the cause of the Ascent and Continued Motion of the Sap; with a new method of preparing plants for physiological investigations." By George Rainey, Esq., M.R.C.S., Communicated by P. M. Roget, M.D., F.R.S.

The ascent of the sap in vegetables has been generally ascribed to a vital contraction either of the vessels or of the cells of the plant: the circumstances of that ascent taking place chiefly at certain seasons of the year, and of the quantity of fluid, and the velocity of its motion being proportional to the development of those parts whose functions are obviously vital, as the leaves and flowers, have been regarded as conclusive against the truth of all theories which professed to explain the phenomenon on purely mechanical principles. The aim of the author, in the present paper, is to show that these